

Shipbuilding – Cargo ships – Guardrails

1. **Scope** This Japanese Industrial Standard specifies guardrails for cargo ships (hereinafter referred to as “guardrail”).

Remarks: 1. This standard makes reference to the following standards:

JIS B 1256 – Plain washers

JIS G 3191 – Shape, dimension, weight and tolerance for hot rolled steel bar and bar-in-coil

JIS G 3194 – Shape, dimension, weight and tolerance for hot rolled flat steel

JIS G 3452 – Carbon steel pipes for pressure service

2. This standard corresponds to the following international standard:

ISO 5480 – 1979 – Shipbuilding – Guardrails for cargo ships

2. **Definitions** For the purposes of this standard, the following definitions apply:

- (1) **Guardrail** A structure to prevent persons falling overboard from a deck, comprising guardrail stanchions, rails, top rails and stays (see **Figs. 1** through **5**).
- (2) **Guardrail stanchion** A vertical structural member of a guardrail.
- (3) **Top rail** The uppermost rail of a series of rails.
- (4) **Rail** A horizontal member between guardrail stanchions.
- (5) **Stay** The secondary structural supporting member fitted to a guardrail stanchion and the deck.



3. **Classification** Guardrails shall be classified as given in **Table 1**.

Table 1 Classification

Type	Guardrail stanchion	Top rail	Rail	Stay	Reference Calculated mass (kg)
H1	65 × 16 flat steel	25A, SGP	φ19 steel bar	65 × 16 flat steel	18.7
		32A, SGP	20A, SGP		15.1
			φ19 steel bar		18.6
			20A, SGP		15.0
H2	32A, SGP	φ19 steel bar		18.6	
		20A, SGP		15.0	
H3	50 × 19 flat steel	25A, SGP	φ16 steel bar	50 × 19 flat steel	15.9
H4	50 × 12 flat steel		20A, SGP		14.2
			φ16 steel bar	50 × 12 flat steel	12.5
			20A, SGP		10.9
W1R	65 × 16 flat steel	(Sectional di- mension B × H) 125 × 55	φ16 steel bar	65 × 16 flat steel	14.8
W1F1	125 × 55		φ19 steel bar		16.8
			20A, SGP		13.2
			φ16 steel bar		14.8
W1F2	125 × 60	φ19 steel bar		16.8	
		20A, SGP		13.2	
		φ16 steel bar		14.8	
W2R	150 × 60	φ19 steel bar		16.7	
		20A, SGP		13.1	
		φ16 steel bar		14.8	
W2F1	150 × 55	φ19 steel bar		16.7	
		20A, SGP		13.1	
		φ16 steel bar		14.8	
W3R	180 × 65	φ19 steel bar		16.8	
		20A, SGP		13.2	
		φ16 steel bar		14.8	
W3F1	180 × 60	φ19 steel bar		16.7	
		20A, SGP		13.1	
		φ16 steel bar		14.7	

- Remarks:**
1. H1, H2, W1, W2 and W3 signify those for freeboard decks, H3 and H4 for upper decks.
 2. H1 through H4 signify steel top rails, and W1R to W3F1, wooden top rails.
 3. The calculated mass represents that of the top rail and rails 1 500 mm long and one guardrail stanchion.
However, the mass of stays and wooden top rail is not included.
 4. See Fig. 1 for types H1, H3 and H4.
 5. See Fig. 2 for H2.
 6. See Fig. 3 for types W1R to W3F1.
 7. See Fig. 4 for top rails for types W1R to W3F1.

4. **Materials** The materials of guardrails shall be as given in **Table 2**.

Table 2 Materials

Component	Material
Guardrail stanchion, stay	JIS G 3194 (50×12, 50×19 or 65×16 flat steel)
Top rail	JIS G 3452 (25A or 32A, SGP) or wood for structural
Rail	JIS G 3191 (φ16 or φ19) steel bar and JIS G 3452 (20A, SGP)

5. **Construction, shape and dimensions** The construction, shape and dimensions of a guardrail shall be as given in **Figs. 1** through **5**.
6. **Designation** A guardrail shall be designated by title or **JIS** number, type, and size of top rail and rail.
Example : Cargo ship – Guardrail H1 – 25 – φ 19 or **JIS F 2607** H1 – 25 – φ 19
7. **Marking** The guardrail stanchion shall be indelibly marked in a conspicuous place with the item agreed between the parties concerned.